

USSR/General and Special Zoology. Insects. Injurious In- 2
sects and Ticks. Pests of Cereal Crops

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 49568

empty storehouses. The new generation did not
succeed in completing its development in the
period between the waxy ripeness and the harvest
of grain crops. -- A.P. Adrianov

Card : 2/2

25

SMOL'YANINOVA, N.M.; KAPLIN, A.A.; VASIL'YEVA, L.M.

Stability of coke in the hot state. Koks i khim. no. 5:25-28 '61.
(MIRA 14:4)

1. Tomskiy politekhnicheskii institut (for Smol'yaninova, Kaplin).
2. Sibirskoye otdeleniya AN SSSR (for Vasil'yeva).
(Coke—Thermal properties)

OSTASHEVSKAYA, N.S.; PAK GYM-SUN; TYUNTUKOV, B.K.; VASIL'YEVA, L.M.;
FEDINA, Ye.Z.; LOSKUTOVA, Ye.N.

Mechanism of the coking of noncaking coals under pressure. Trudy
Khim.-met.inst.Sib.otd. AN SSSR no.18:54-64 '63. (MIRA 17:4)

I 7539-66 ENT(m)/EPF(c)/EWP(t)/EWP(b) LJP(c) JD/JG/WB

ACC NR: AP5025782

SOURCE CODE: UR/0363/65/001/009/1493/1497

AUTHOR: Komissarova, L. N.; Men'kov, A. A.; Vasil'yeva, L. M.

ORG: Moscow State University im. M. V. Lomonosova (Moskovskiy gosudarstven-
nyy universitet)

TITLE: Properties of scandium phosphide

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965,
1493-1497

TOPIC TAGS: phosphide, scandium compound, corrosion resistance, physical
chemistry property

ABSTRACT: Scandium phosphide was obtained by direct reaction of metallic
scandium and red phosphorous. The substances were mixed in powder form in a
quartz ampoule. A table shows the detailed temperature conditions used for the
reaction. The resulting fine black powder was analyzed for scandium and phospho-
rous. The article gives a diagram of the analytical apparatus and the results of
analysis in tabular form. X-ray analysis was done by the powder method. The
x-ray photos were taken with a RKD-86 camera with filtered copper irradiation.

Card 1/2

UDC:546.633'181.1

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The scandium phosphide obtained had a crystal structure of the sodium chloride type with $a = 5.302 \pm 0.005$ kX, $Z=4$. Its density at 20C was 3.33 grams/cm³. The compound was thermally stable during heating in a high vacuum (10^{-4} mm Hg). It underwent no polymorphic transitions in the interval from 20 to 1500C and did not melt up to 2000 C. However, during heating above 1000 C, even in a high vacuum, the surface of the sample oxidized with the formation of scandium phosphate. In air, scandium phosphide begins to oxidize noticeably above 350C. A sample held in air at 1200 C to constant weight, increases in weight by 79%. X-ray analysis of the oxidized sample shows the lines characteristic of anhydrous ScPO₄(scandium phosphate) with the parameters $a=6.578 \pm 0.003$ A, $c=5.795 \pm 0.005$ A. The chemical resistance of scandium phosphide was investigated in water, acids (HCl, H₂SO₄, and HNO₃), and alkalis (25 and 50% solutions of NaOH) of different concentrations. Results are shown in a table. In general, scandium phosphide was found to be resistant to water and alkaline solutions, but to be easily decomposed by acids. Orig. art. has: 2 figures and 5 tables

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Card 2/2

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